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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/698,875

10/31/2003

Bulent M. Basol

NT-286-US

2008

7590

08/02/2005

NuTool, Inc.
Legal Department
1655 McCandless Drive
Milpitas, CA 95035

EXAMINER

DOLAN, JENNIFER M

ART UNIT

PAPER NUMBER

2813

DATE MAILED: 08/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

RECEIVED
OIPET/AP
AUG 26 2005

Office Action Summary

Application No.

10/698,875

Applicant(s)

BASOL ET AL.

Examiner

Jennifer M. Dolan

Art Unit

2813

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,9-18 and 20-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7,8 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3/22/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 5, 6, 9-18, and 20-32 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 5/23/05.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent No. 4,968,375 to Sato et al.

Regarding claims 1, 2, and 19, Sato discloses a method of removing a conductive material from an edge region of a workpiece/semiconductor IC device (see column 1, lines 5-15; column 2), comprising: supplying an etch solution to create an etchant bead (column 6, lines 14-18) at a contoured opening (21a) of an edge removal device (figure 2a); contacting the edge region of the workpiece with the etchant bead (column 3, lines 17-50; column 6, lines 14-30);

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and establishing relative motion between the workpiece and the edge removal device to remove the conductive material from the edge region of the workpiece (column 5, lines 15-35; column 6, lines 5-14), where the etchant bead is maintained at the opening of the removal device (column 6, lines 14-17).

Regarding claims 3 and 4, Sato discloses that the edge removal device comprises a cavity (21a) having the opening, such that the edge of the workpiece is inserted into the cavity and the etch solution contacts the top, bottom, and side of the workpiece (figures 2a, 2b; column 3, lines 30-50).

4. Claims 1-4 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,523,553 to Redeker et al.

Regarding claims 1, 2, and 19, Redeker discloses a method of removing a conductive material (column 1, lines 50-52) from an edge region of a workpiece/semiconductor IC (column 2, lines 5-45; 60-67) comprising the steps: supplying an etch solution (column 5, lines 5-25) to create an etchant bead at a contoured opening (31) of an edge removal device (figure 2); contacting the edge region of the workpiece with the etchant bead (column 5, lines 34-46); and establishing relative motion between the workpiece and the edge removal device to remove the conductive material from the edge of the workpiece (column 5, lines 36-42), where the edge bead is maintained at the opening (column 5, lines 9-14; etchant supply and outlet lines maintain the edge bead).

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Regarding claims 2 and 3, Redeker discloses a cavity (31), where the edge of the workpiece is inserted into the cavity (figure 2), and where the etch solution contacts the top, bottom, and side of the workpiece (figure 2; column 5).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato et al. in view of U.S. Patent No. 6,550,091 to Radman et al.

Sato fails to disclose that the cavity includes a spongy material, where the edge region of the workpiece is contacted with the spongy material.

Radman discloses a method for scrubbing the edge portions of a wafer, wherein the cavity includes etchant solution and a spongy material (230) that contacts the workpiece (see column 5, lines 15-47; figures 3b; 4; 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Sato, such that a spongy material contacting the workpiece edges is included, as suggested by Radman. The rationale is as follows: A person having ordinary skill in the art would have been motivated to include a spongy material, because Radman teaches that the combination of applying an etching solution and scrubbing the wafer

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with a pliable pad material will aid in removing undesired metal deposits and will more efficiently clean the wafer (see Radman, column 3, lines 1-10; column 5, lines 15-45; column 6, lines 22-27).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. U.S. Patent No. 6,063,232 to Terasawa et al. teaches polishing a wafer by applying a foam scrubbing member and a bead of etchant solution in a cavity.
- b. U.S. Patent No. 5,868,857 to Moinpour et al. discloses using pads and etchant-supply nozzles for cleaning the periphery of a wafer.
- c. U.S. Patent No. 5,608,943 to Konishi et al. discloses an apparatus for cleaning the bottom outer periphery of a semiconductor wafer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer M. Dolan whose telephone number is (571) 272-1690. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

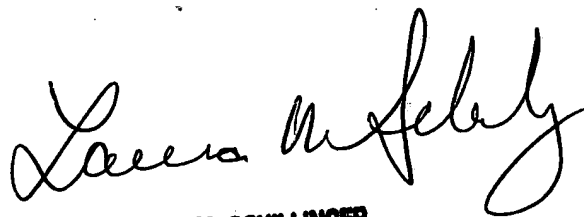
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carl W. Whitehead, Jr. can be reached on (571) 272-1702. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jennifer M. Dolan
Examiner
Art Unit 2813

jmd



LAURA M. SCHILLINGER
PRIMARY EXAMINER



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Basol et al. Serial No.: 10/698,875 Filed: October 31, 2003 Title: Method And Device To Remove Unwanted Material From The Edge Region Of A Workpiece	Group Art Unit: 2812 Examiner: Not yet assigned Docket: NT-286-US
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INFORMATION DISCLOSURE STATEMENT**US PATENT DOCUMENTS**

Examiner Initials	Cite No.	Document Number	Publication Date	Name of Patentee or Applicant	
<i>[Signature]</i>	AA	US-6,494,219	Dec., 2002	Nayak et al.	Copy Enclosed
<i>[Signature]</i>	AB	US-2001/0052159	Dec., 2001	Moinpour et al.	Copy Enclosed
<i>[Signature]</i>	AC	US-6,309,981	Oct., 2001	Mayer et al.	Copy Enclosed
<i>[Signature]</i>	AD	US-6,056,869	May, 2000	Uzoh	Copy Enclosed

FOREIGN PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number	Publication Date	Name of Patentee or Applicant		

OTHER DOCUMENTS

Examiner Initials	Cite No.			Trans- lation

Examiner Signature	<i>[Signature]</i>	Date Considered	7/29/05
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Notice of References Cited	Application/Control No. 10/698,875	Applicant(s)/Patent Under Reexamination BASOL ET AL.	
	Examiner Jennifer M. Dolan	Art Unit 2813	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-4,968,375	11-1990	Sato et al.	156/345.23
	B	US-6,523,553	02-2003	Redeker et al.	134/61
	C	US-6,550,091	04-2003	Radman et al.	15/77
	D	US-6,063,232	05-2000	Terasawa et al.	156/345.23
	E	US-5,868,857	02-1999	Moinpour et al.	134/6
	F	US-5,608,943	03-1997	Konishi et al.	15/302
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

NEW CENTRAL FAX NUMBER

Effective July 15, 2005

On July 15, 2005, the Central FAX Number will change to **571-273-8300**. This new Central FAX Number is the result of relocating the Central FAX server to the Office's Alexandria, Virginia campus.

Most facsimile-transmitted patent application related correspondence is required to be sent to the Central FAX Number. To give customers time to adjust to the new Central FAX Number, faxes sent to the old number (703-872-9306) will be routed to the new number until September 15, 2005.

After September 15, 2005, the old number will no longer be in service and **571-273-8300** will be the only facsimile number recognized for "centralized delivery".

CENTRALIZED DELIVERY POLICY: For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the Central FAX number, unless an exception applies. For example, if the examiner has rejected claims in a regular U.S. patent application, and the reply to the examiner's Office action is desired to be transmitted by facsimile rather than mailed, the reply must be sent to the Central FAX Number.

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